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A STUDY TO DETERMINE THE BEST METHOD
TO SUPPLEMENT THE STAFFING OF THE
DEPARTMENT OF NURSING DURING PERIODS
OF SUDDEN PEAK WORKLOAD AT
WILLIAM BEAUMONT ARMY MEDICAL CENTER
EL PASO, TEXAS

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A Problem Solving Project
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In Partial Fulfillment of the
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of
Master of Hospital Administration

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By

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CHAPTER I

INTRODUCTION

General Information

Providing adequate staffing is one of the most persistent and important concerns that is faced by the Chief of the Department of Nursing and the Hospital Administrator. Historically, there has been a "shortage" of nurses in the United States which most officials point to as the cause of staffing problems in their own institutions.¹ Many civilian hospitals have been forced to adapt to this shortage by instituting various supplemental staffing methods (refer to Appendix A).

The Department of the Army medical treatment facilities, such as William Beaumont Army Medical Center (refer to Appendix B), are dependent upon the Manpower Survey to determine personnel requirements, which translate into nursing staff resources. The survey team makes determinations of requirements based upon "a normal workload accomplished by workers possessing average capabilities".² The problem of providing staffing for temporary peak workloads is not addressed by the Manpower Survey, but left up to the ingenuity of the leadership of the Department of Nursing (refer to Appendix C). Furthermore, since the cost containment issue has become paramount in health care administration today, great care must be taken to provide for this contingency in the most cost effective manner.

Conditions Which Prompted the Study

William Beaumont Army Medical Center is presently undergoing a major construction project, an electrical-mechanical upgrade. This project has significantly affected the operating room capability. Despite efforts to maintain high work levels by keeping the unaffected operating rooms open over 12 hours per day, the surgical backlog increased from one month to over three months.³ The Command anticipated the completion of the project and was anxious to take steps to eliminate the backlog of surgical cases. All departments were asked to evaluate the impact of running eight operating rooms for a period of time until the surgical backlog was reduced to a pre-electrical-mechanical upgrade time frame. The Department of Nursing responded with a detailed list of resources that would be needed to accommodate the projected increase in workload (refer to Appendix D). The major constraining factor was obtaining the necessary manpower, since the Health Services Command recognizes additional manpower requirements only after an increase in workload has been documented retrospectively. It has long been a concern of the clinical and administrative staffs at William Beaumont Army Medical Center, as well as throughout the Army Medical Department, of how to supplement the staff during periods of temporarily increased workloads. Other circumstances besides that of the construction project could easily duplicate the pending staffing situation. The flu season has the potential of increasing patient census by 50 to 100 patients in a very short time. Three years ago an outbreak of food poisoning resulted in over 53 patients being admitted in just two days.⁴ The previous examples show a problem of macronature, that is, when the entire hospital census goes up in a sudden, drastic way. In addition,

there is a more subtle problem of staffing unique to the Department of Nursing. This occurs on a nursing unit level when either the census on that unit hits full capacity, or the patient mix reflects a very high acuity index indicating the need for increased nursing hours to care for the patients' needs. The immediate need for supplemental staffing also occurs on a reoccurring basis at a unit level because of staff illness, emergency leave, or temporary duty for travel to educational conferences.

Due to the concern of the Command to recover rapidly from the effects of the electrical-mechanical upgrade upon William Beaumont Army Medical Center's workload, as well as the aforementioned ongoing situations that require supplemental staffing within the Department of Nursing, a study was proposed to explore the problem and offer recommendations for its solution.

Statement of the Problem

The problem is to determine the best method to supplement the staffing in the Department of Nursing at William Beaumont Army Medical Center during periods of sudden, temporary peak workloads.

Assumptions

The study will assume that:

1. The present funding levels will remain in effect for this fiscal year.
2. the present inpatient workload at William Beaumont Army Medical Center will continue at current levels or increase in the near future, and

3. an adequate number of professional nurses are present in the El Paso community to support a proposed solution.

Objectives

1. To analyze past reasons for temporary increases in aggregate workload as well as unit level workload.
2. To analyze past methods of supplemental staffing in the Department of Nursing.
3. To develop alternative solutions that are available to supplement staffing and evaluate the advantages and disadvantages of each alternative.
4. Select the most feasible alternative and develop an implementation outline.

Criteria

Any recommendations for a proposed solution to supplementing the nursing staff at William Beaumont Army Medical Center should satisfy the following criteria:

1. Standards of the Joint Commission on Accreditation of Hospitals, 1980 -- Nursing Services.
2. Standards of Department of Army for Manpower Utilization.
3. Standards of the Office of Personnel Management.

Limitations

The following limitations had a bearing on this study:

1. The solution must fall within current manpower and fiscal limitations as set forth by the Health Services Command.

2. The study was restricted to the review of the effect of increased workload on medical-surgical nursing units.

3. The study is further restricted to examining just registered nurse staffing.

Since there is a great variety of job skills within the Department of Nursing, the selection of medical and surgical nursing units served to decrease the need for many sub-specialty trained nurses. Thus if the proposed solution were found to be successful in this medical-surgical section of the hospital, it could at a later time be incorporated into other areas of the Department of Nursing.

Research Methodology

In this era of rapidly rising prices in all sectors of the economy, there is great concern over controlling health care costs. The problem identified here deals with nurse staffing. Salary expense is a major component of the hospital's budget. Therefore, it is appropriate that cost-benefit analysis be used to evaluate the various alternatives to be considered.

Anthony describes two approaches to cost-benefit analysis.⁵ In the first approach the benefits that are expected are expressed in some quantitative way and a cost per unit is then calculated. Ignoring non-quantitative considerations, the alternative with the lowest cost per unit is termed the best. The second does not attempt to quantify the benefits. A careful estimate is made and the decision is based on whether the benefits are worth the costs. The costs and benefits of each alternative action are determined and expressed as a ratio of costs to

benefits. These ratios provide information about the costs of obtaining different results. Therefore, cost-benefit analysis does not necessarily identify the cheapest acceptable alternative. It provides information about various results which can be obtained for different costs. This second approach will be used in this study.

In all organizations, the resources invested in solving a particular problem can be quantified in monetary terms. However, there are many problems associated with quantifying the outputs in the health care arena, specifically with nursing care. In dealing with these outputs, the attempt will be made to estimate the relative benefits of each alternative for the entire organization.

The research methodologies used in this paper will include:

1. personal interviews with appropriate department and division heads in the Medical Center,
2. personal interviews with representatives from civilian hospitals and nursing agencies,
3. survey of the literature,
4. analysis of past staffing records, and
5. a cost-benefit analysis of the proposed alternative solutions.

Literature Review

Staffing patterns in the Department of Nursing are usually a compromise among three factors: (1) the staffing pattern desired by the chief nurse, (2) the staffing that the budget of the institution can support, and (3) the staffing personnel available in the community.⁶ With concerns over the control of health care costs and the shortage of

nursing personnel nationwide, the chief of a department of nursing faces a constant challenge to provide adequate staffing so that an acceptable level of quality care is achieved. Given a sudden increase in the patient census, there must be some plan available to augment the nursing staff of the institution. Stevens points out that given the economic realities of the day, staffing must be based upon periods of average activity but adjustments should be made for periods of increased or decreased activity.⁷ Many factors must be taken into consideration when determining nurse staffing requirements. (See Table I)

TABLE 1

VARIABLES AFFECTING STAFFING PATTERNS

1. Patient factors
 - a. Level, complexity, and duration of care needs.
 - b. Types of patients served: their conditions, illnesses, age groups, and other specific selective factors.
 - c. Numbers of patients and fluctuations in numbers.
 - d. Socioeconomic factors influencing health needs.
 - e. Patient expectations for care.
2. Staff factors
 - a. Number and mix of nursing personnel.
 - b. Hours and rotation policies.
 - c. Job descriptions and role functions.
 - d. Personnel policies.
 - e. Education and experience levels of personnel.
 - f. Competitive markets for staff in community.
 - g. The work ethic of staff members.

3. Environmental factors

- a. Physical layout of institution and patient units.
- b. Number of patient beds.
- c. Facilities and services offered.
- d. Equipment and supplies available.
- e. Supportive services from other divisions and departments.
- f. Supportive services from other agencies.

4. Nursing and Institutional objectives

- a. Level and type of care institution desires to give patients.
- b. Selected care assignment patterns.
- c. Services, education and other, that institution desires to give personnel.
- d. Nursing administration supportive services.

Source: Stevens, Barbara J. The Nurse as Executive. Wakefield, Massachusetts: Contemporary Publishing, Inc., 1975, p. 131.

Nurse staffing problems have been studied for more than a half century, the earliest being the Goldmark Report (1923).⁸ Most of the early studies focused on supply and demand and the educational preparation of personnel to carry out nursing services. More recently, Aydeloote and Turner looked at the need to match staffing to patient workload.⁹ They found that increasing nursing personnel did not increase the amount of time that was spent in direct contact with patients. The problem of determining the use and effectiveness of nursing service personnel is still present today.

Staffing Methodologies

Prior to examining the literature for suggestions on handling

the need for increased staffing, it is appropriate to explore some methodologies used to calculate routine staffing requirements. One of the most common staffing methodologies reported in the literature requires that workload be determined in terms of time required to perform various patient care activities.¹⁰ In this method a survey is conducted and average times are assigned to various tasks associated with the typical patient on that nursing unit. The average times are multiplied by the patient census. This result is divided by eight hours to determine the coverage requirements expressed in workers per day.

Example: Five hours of professional care/day x 20 patients = 100 hours ÷ 8 = 12.5 professional workers
(Rounded figure = 13)

By this methodology, 13 professional nurses are required for a 24-hour period in order that each patient receive the proper amount of care and attention. The staff would most likely be distributed in this manner: Day shift - 7; evening shift - 4; night shift - 2. Again, the actual distribution would depend upon many internal variables and considerations for the support systems or lack of them that are operating in the institution. The major criticism of this methodology is that it is relatively simple and does not recognize the uniqueness of patients, their families, the physicians, various hospital policies and many other non-time related factors.¹¹

Norby, et. al. proposed a unique staffing methodology based upon assignment difficulty.¹² In this system, workload is calculated in "difficulty units" and staffing is calculated in "the worker's capacity for difficulty". While time is certainly an element that is considered in performing an assignment, many other factors can be

considered and quantified using this method including: staff knowledge and skill, manual dexterity of the staff, organizational abilities, staff problem solving abilities, access to supplies and equipment, administrative support and comfort of the patient.¹³ This system is designed to be computerized and has had great success in maximizing available resources to achieve a high level of cost effectiveness.

Staffing-Fluctuating Workloads

Having addressed methodologies for determining staffing needs, it is now time to examine various strategies that have been used in providing extra help to a department of nursing. Stevens delineates three different staffing plans: the regular staff, the float staff, and the emergency staff.¹⁴ The regular staff is determined by the average activity level on a given unit. The float staff is deployed because of increased workload or absence of regular staff due to illness or other reasons. The emergency staff is used to meet atypical requirements that could not otherwise be handled by the first two groups, i.e. supplement during peak vacation time or extremely high census.

Langford reports that until recently the only answer for a nursing service director faced with a staff shortage or fluctuation in census was to create a float pool from existing staff or to prevail upon nurses to work overtime.¹⁵

Supplemental Agencies

Within the past ten years in the civilian sector, there has been another approach to nurse staffing shortages, the creation of

supplemental nursing services. On the surface, the use of supplemental nurses appears to be an ideal solution to a staffing problem concerning a fluctuating census. However, the direct salary cost to the institution is estimated to be at least one third to one half more than their own staff working on straight time.¹⁶ In addition Langford found that there is concern over the quality of care that these nurses can give.¹⁷ A hospital that requests help from an agency does not hire that nurse and has no control over the individual. Some alleged difficulties that hospitals encounter when using proprietary agencies are:

- poor screening of applicants by the agency
- inadequate credentialing review, including license and reference checks
- little or no orientation offered by the agency to the nurse, so that the nurse comes to the unit "cold"
- lack of interagency communication about poorly qualified nurses, thus allowing "agency hopping" by such nurses
- no continuity of care - rarely does the same nurse fill the same vacancy twice
- escalation of agency fees to hospital
- morale problems - hostility between staff nurses and agency nurse¹⁸

The Joint Commission on Accreditation of Hospitals has responded to concerns from hospital by expanding the Standards in Nursing Services

to include Agency Nurses (refer to Appendix E).

Another approach that some hospitals have taken in order to provide for contingency registered nurse resources is to form their own non-profit registry.¹⁹ Both individual hospitals as well as hospital associations have established registries. This approach eliminates many of the quality control problems, in addition, this methodology is less costly to the hospitals concerned.

Footnotes

¹ Letitia Cunningham, "Nursing Shortage? Yes!", American Journal of Nursing, Vol. 79, No. 3, March 1979, p. 469-480.

² , Determining Manpower Requirements for Army Nursing Personnel (Ft. Sam Houston, Texas: Academy of Health Science, U.S. Army, October 1972), p. 118.

³ , Personal interview with Dr. Francis Heck, Chief of Surgery, William Beaumont Army Medical Center, January 14, 1980.

⁴ William R. Tiffany, Critique of Dona Ana Shigella Outbreak After Action Report of Emergency Preparedness Plan Committee, William Beaumont Army Medical Center, El Paso, Texas, 3 December 1976.

⁵ Robert N. Anthony, Management Accounting Principles (Homewood, Illinois: Richard D. Irwin, Inc., 1970), p. 600-601.

⁶ Barbara J. Stevens, The Nurse as Executive (Wakefield, Massachusetts: Contemporary Publishing, Inc., 1975), p. 131.

⁷ Ibid., p. 133.

⁸ Laurel N. Murphy, Methods for Studying Nurse Staffing in a Patient Unit, DHEW Publication No. HRA 78-3 (Hyattsville, Maryland: U.S. Department of Health, Education, and Welfare, Public Health Service, Department of Nursing, _____), p. 61.

⁹ Ibid., p. 2.

¹⁰ Ronald R. Norby, et. al., A Nurse Staffing System Based Upon Assignment Difficulty, Journal of Nursing Administration, November 1977, Vol. VII, No. 9, p. 41.

¹¹ Ibid.

¹² Ibid., p. 10.

¹³ Ibid., p. 11.

¹⁴ Stevens, p. 134.

¹⁵ Teddy Langford and Patricia Prescott, "Hospitals and Supplemental Nursing Agencies: An Uneasy Balance", Journal of Nursing Administration, November 1979, p. 16.

¹⁶ Personal Interview with O. Ray Hurst, President of Texas Hospital Association, 23 October 1979.

¹⁷ Langford, p. 17-20.

¹⁸"Who Controls Quality of "Temporary" Registry Nurses?",
Hospital Peer Review, (February 1979), p. 17.

¹⁹Ibid., p. 19.

CHAPTER II

DISCUSSION

The following discussion will include a description of the manpower allocation system, the reasons for fluctuations in the workload at William Beaumont, past reactions by the Department of Nursing to changes in the workload and an analysis of alternatives that could be used to augment the nursing staff in the medical-surgical units at the Medical Center.

Army Manpower Allocation System

With manpower resources being in critical short supply, the Army keeps a very close watch on how the authorizations for these resources are distributed throughout the various commands. The Department of the Army Pamphlet 570-577, entitled Staffing Guide for Medical Department Activities provides guidance for determining the number and kind of positions required to operate institutions of various sizes and workloads.¹

Manpower Survey

The actual determination of manpower requirements is done by a Manpower Survey Team during an on-site appraisal. These on-site visits occur about every three years. At that time an appraisal is made of the military and civilian manpower requirements to determine

the minimum number of manpower spaces required to accomplish the mission.² Prior to the visit of the survey team, the hospital is asked to prepare necessary documentation of requirements on a DA Form 140-4, commonly called the "Schedule X". The "Schedule X" is done for each specific unit or activity by the head nurse. The survey team uses the information provided on the "Schedule X", the codes and yardsticks contained in the Staffing Guide, and their own observations during the visit to establish recommended requirements for the activity. A basic survey principle is: "Recommendations concerning manpower requirements are made without regard to the availability of resources."³ Another basic survey principle stated, "a normal workload accomplished by workers possessing average capabilities".⁴ This obviously means that requirements are determined to staff a unit for its average workload, and not provide any excess resources to handle peak workload situations.

The number of authorized spaces that an activity is given ranges about 80% of their actual recognized requirement. The number of people really present for duty depends upon the number assigned at present to that activity. The summary of this information for the Medical Center is contained in its Table of Distribution and Allowances (TDA). (See Table II)

TABLE II

SUMMARY OF TDA

Recapitulation by Identity Group	Strength	REQ AUTH
Officers	577	444
Warrant Officers	7	1
Enlisted	811	695
TOTAL MILITARY	1395	1140
General Schedule	998	838
Wage System - WS	17	13
Wage System - WL	18	4
Wage System - WG	168	97
TOTAL CIVILIANS - Direct Hire	1201	952
TOTAL TDA	2596	2092

Source: Table of Distribution and Allowances for William Beaumont Army Medical Center, El Paso, Texas, April 1980.

Force Development Office

According to William Beaumont Regulation 10-1, the Chief of the Force Development Division performs the following functions:

1. maintains a system for manpower strength accounting and reporting
2. programs, allocates and controls military and civilian spaces

3. initiates changes to manpower requirements as a result of manpower surveys conducted by higher headquarters

4. coordinates and consolidates reports on manpower requirement strengths and authorizations

5. maintains close coordination with the comptroller in order to assure that program/budget actions are in accord with approved manpower actions

6. acts as a liaison with the supporting Civilian Personnel Office on matters pertaining to civilian personnel management.⁵

The importance of this office cannot be over stated. It is the responsibility of this individual to assist and advise the commander in matters pertaining to manpower management.

An interview with the Chief of the Force Development Division revealed that at the present time there is no method available to provide supplemental staffing to the Department of Nursing for projected increases in workload, even though by analyzing past records one could predict periods of increased census. (refer to Appendices G and H) In addition there were no options presently in place that could be used to aid individual nursing units to manage unexpected changes in their staffing pattern or unit workload fluctuations.

Civilian Personnel Office

A prime responsibility of this activity is to recruit and place new civil servants into the work force as vacancies occur. It normally

takes about 60 days to process a request for an employee (from the time the hire action is started by the supervisor, until the employee comes to work for the first time). This office has not enjoyed a good reputation for responsiveness to the needs of William Beaumont in the recent past. This can be explained in part due to the overall reduction in civilian personnel office staff.

During an interview with a representative from the Position and Pay Management Branch of the Civilian Personnel Office, it was revealed that there exists a category of worker called the "intermittent employee".⁷ This employee is called to work when actually needed and has been used as adjunctive help working in the Commissary at Fort Bliss. In addition, it was discovered that William Beaumont already uses these workers to help staff the Central Appointment desk to cover periods of unexpected absences of the regular staff.

The "intermittent worker" as defined by Civilian Personnel Regulation 990-2 (C-1) 610.SI, "services are those rendered by employees for whom no tour of duty can feasibly be established on a continuing basis. It applies to those employees who are expected to respond to requests for duty in connection with some unscheduled activity."⁸ Under no circumstances may the intermittent employee be assigned a continuing pre-scheduled tour of duty.

Funding the Work Force

The military work force is funded centrally, whereas the civilian work force is funded out of the program budget for the Medical Center. The funding level is determined as a percentage of the total

authorized strength. In recent years about 2% of the authorizations were not funded, since it was estimated that this percentage of positions would be vacant at any given point in time.

The FY 80 funding level guidance for William Beaumont was for 990 manyears. Each manyear equals a specified dollar amount for a given year (currently \$17,000). Therefore:

$$990 \text{ manyears} \times \$17,000 = \$16,830,000$$

This is the amount of funds available to pay civilian employees. At mid-year the actual amount of manyears used was only 489, or projecting for the full year, 978. Therefore, there appears to be money available for hiring additional workers during the remainder of the fiscal year. Unfortunately, these funds were partially depleted by the amount of overtime that was used, about two manyears, as well as the amount of terminal leave that was taken, about four manyears. Nevertheless, the comptroller feels that funds are available to augment the nursing staff if the command wishes to use the monies in this manner. In addition, the initial budget guidance for FY 81 looks favorable as well.⁹

Workload Fluctuations

Aggregate Fluctuations

In the past three years, there has been a number of occasions when the patient census has taken a dramatic rise with little if any warning. (refer to Appendix G) These temporary increases in census place added strain on an already hard working staff.

The flu season is semi-predictable and occurs usually between November and March each year. With the coming of winter, the hospital can expect 50 to 75 flu patients at the peak of a moderate outbreak. A severe epidemic could cause over 200 patients to be admitted. The military setting dictates hospitalizing soldiers with flu to decrease further chance of spreading the virus, since soldiers in basic combat training live in open bay barracks. Although this type of patient does not require a lot of special nursing care, beds are occupied and personnel are needed to monitor and assist these patients.¹⁰

Another major impact of the flu season is the potential depletion of the staff, as they too are affected by the same virus. This situation can become critical in a very short time.

Another example of a very rapid increase in hospital census occurred in November 1976 at the time of the Dona Ana Shigella Outbreak.¹¹ At this time, a severe outbreak of gastroenteritis occurred which caused 53 patients to be hospitalized within a twenty-four hour period. The patient census on the day of the incident was 432, already six over William Beaumont's official operating bed level. Although these patients only required minimal special nursing care, there was a tremendous burden placed upon the nursing staff that was already very busy.

Impact of Electrical Mechanical Upgrade

The Commander along with the Chief of Professional Services recognized early that the Electrical Mechanical Upgrade would affect the surgical workload. (refer to Appendix D) The surgical workload

averaged 384 cases per month during the first eight months of the year. However, once the electrical mechanical upgrade work began in the operating rooms in September, surgical procedures decreased considerably. The last four months of the year averaged 277 cases per month. Seeing this trend in October, the command came up with the idea of increasing the operating room schedule to eight rooms as soon as the electrical mechanical upgrade was finished. This would be done in an attempt to reduce the surgical back-log that had grown from one month to over three months by the month of January 1980.¹²

Each department and division was asked to prepare an impact statement for the proposal. The Department of Nursing's response (refer to Appendix E) identified that manpower would be the major constraint in attempting to accommodate the increased workload. It was pointed out in the impact statement that projecting an increased workload was not justification for awarding new manpower requirements.

There is no mechanism at present for supplementing the nursing staff. All available resources are already committed as a part of the regular staffing plan. This exposes a basic flaw in the staffing plan for the Department of Nursing.

Unit Level Fluctuations

In addition to aggregate increases in the hospital census, there are more subtle changes in workload that are experienced by individual nursing units. The nature of a patient's illness to a large extent dictates the amount of nursing workload that exists. On a typical medical unit the census may average over thirty occupied beds. However,

only one registered nurse is assigned to that unit on most evening shifts and all night shifts. (refer to Appendix I) The following table is a summary of Appendix J that indicates the minimal acceptable staffing levels.

TABLE III

DEPARTMENT OF NURSING MINIMUM STAFFING STANDARDS
NUMBER OF SHIFTS WITH ONE PROFESSIONAL NURSE (RN) DURING ONE WEEK (21 SHIFTS)

6E - 16 out of 21	8W - 16 out of 21
6W - 16 out of 21	9E - 9 out of 21
7E - 16 out of 21	9W - 9 out of 21
7W - 16 out of 21	10W - 9 out of 21
8E - 19 out of 21	<hr/>
	126 = 66% of all shifts
	189

If only one of the thirty patients requires an unusual amount of care, the nurse is hard pressed to accomplish all the appropriate tasks to be done on that shift. An interview with the Supervisor of the Medical-Surgical section of the Department of Nursing revealed that this type of staffing pattern has been responsible for poor morale, high stress and relatively high incidence of sick leave among the military staff.¹³ When the individual scheduled for work does not report for duty due to illness, it causes a domino effect among the staff on that unit as the head nurse or supervisor attempt to find coverage. (refer to Appendix K) This happening is the ultimate "sudden temporary increase in workload" on the nursing unit level -- an average census with no coverage.

The nursing units are particularly vulnerable during the summer when vacations and permanent changes of assignment leave gaps in an already bleak staffing picture. For example, in the entire Department of Nursing for the summer, there are projections of 27 losses with only 13 gains, according to the Chief Nurse.¹⁴ One may redefine a temporary peak workload in the aggregate from the viewpoint of an average census or workload but with a critical shortage of personnel to accomplish the work to be done. In all of these situations, the staffing plan of the Department of Nursing lacks the supplemental resources necessary to fill gaps, to augment a busy unit, or to staff for an increase in workload even when the increase is known in advance.

Current Methods Used to Staff Fluctuations in Workload

Departmental Strategies

The Department of Nursing has had to rely solely upon its regular staff to adjust to increased workloads. This is done primarily by the staff to work harder and longer, if necessary. Depending on the reason for the increased census, that is, the severity of illness of the hospitalized patients, staffing would be adjusted to attempt to meet the requirement. For example, if the census were to rise dramatically due to a flu epidemic, the Acute Respiratory Disease Expansion Plan would be put into effect. (refer to Appendix L) This plan requires minimal registered nurse staffing as written. However, if the census increased due to the need to hospitalize patients for surgery or medical problems of a complex nature, higher professional staff ratios would be necessary. Given this situation, alternatives

that might be considered include:

(1) use some of the various staff officer nurse corps personnel to aid in staffing the newly established units, i.e. the Nursing Methods Analyst, the Discharge Planning Nurse, the Special Projects Officer, the staff from the Education and Training Section.

(2) change the military staff to six day work weeks. This would result in an increase of the military nurses' productive time by 20%, thus freeing up some nurses to staff the expanded nursing units.

(3) change the military staff to five day, 12 hour weeks. This would result in an increase of the military nurses' productive time by 50% and in effect add even more capability for expansion.

(4) ask the Health Services Command for assistance by diverting some personnel from other Medical Treatment Facilities that are less busy.

Unit Level Strategies

As individual unit workloads increase, that unit's head nurse is primarily responsible for seeing that adequate staffing levels exist. However, the alternatives available to the head nurse are extremely limited, with no supplemental staff available. The basic choice is again asking the available staff to work harder and longer. When a nurse who is scheduled to work becomes ill, the head nurse has to call in someone from a day off or reschedule someone from another shift. The frequency with which changes occur on the time schedule is conclusive proof that this methodology of achieving coverage is very disruptive to the staff. (refer to Appendix K)

The nursing supervisor coordinates the movement of personnel from one unit to another if an "extra" staff member is available to move to fill a gap in the coverage. Usually coverage is attempted to be made from the "sister unit" on the same floor. There are two nursing units on each floor consisting of 36 beds each. Since each floor has similar type patients, it is preferable to borrow from like units.

Alternative Solutions

There are three alternatives that will be examined by using cost-benefit analysis. They include:

1. Contract for Supplemental Nursing Services to a Civilian Firm.
2. Establish an In-Hospital Registry of Intermittent Registered Nurses.
3. Maintain the Present Methods of Staffing.

Alternative I: Contract for Supplemental Nursing Services to a Civilian Firm

This alternative is perhaps the most radical, given the traditions and customs of staffing Army hospitals. However, the alternative is quite innovative and may prove to have obvious merit as it is looked at closely. A major problem with this alternative is that it has never been done before. It would be fair to say that there would be a certain amount of resistance from approving authorities, the Health Services Command, in allowing this precedent to occur.

The following is an estimation of the costs associated with the alternative. There are five Supplemental Nursing Agencies in El Paso that charge area hospitals an average of \$12.50 per hour for a registered nurse.¹⁵

$$\begin{array}{r}
 \$12.50 \text{ per hour charge} \\
 \times 8 \text{ hour shift} \\
 \hline
 \$100.00 \text{ per shift per registered nurse}
 \end{array}$$

A. Aggregate Census Increase

$$\begin{array}{r}
 \$100.00 \text{ per shift} \\
 \times 5 \text{ registered nurses per day} \\
 \hline
 \$1500.00 \text{ Total cost per day}
 \end{array}$$

$$\begin{array}{r}
 \$500.00 \text{ per day} \\
 \times 30 \text{ days} \\
 \hline
 \$15000.00 \text{ per month}
 \end{array}$$

Therefore the cost of staffing one nursing unit, using supplemental nurses for a thirty day period would be \$15,000.00. These nurses would most likely not be used to do the total staffing but be placed on units that are already established. Existing staff would then be free to man the expanded nursing unit.

B. Unit Level Increase in Census or Decrease in Staff

In estimating the need for supplemental staffing at a medical-surgical unit level, it is assumed that there is a need for three registered nurses for a 24 hour period. These individuals would be used to augment existing staff that have a demonstrated heavy workload, or to fill vacant positions left by individuals who are ill.

$$\begin{array}{r}
 \$100.00 \text{ per shift} \\
 \times 3 \text{ registered nurses} \\
 \hline
 \$300.00 \text{ per day cost}
 \end{array}$$

$$\begin{array}{r}
 \$300.00 \text{ per day} \\
 \times 365 \text{ days/year} \\
 \hline
 \$109,500.00 \text{ annual cost}
 \end{array}$$

\$ 15,000 Cost of Funding one 30 day
Period for Expansion of 1 ward
109,500 Annual cost of unit level
\$124,500 Total Cost of Alternative I

The basic advantage to this alternative is that it provides a readily available source of nursing resources. There is no lag time associated with getting the workers on duty other than the time necessary to consummate the initial contract (estimated to be 14-21 days).

In addition to cost and those concerns listed in Chapter I under Supplemental Agencies, the issue of personal services must be resolved. After receiving the purchase request the contracting officer must determine whether the procurement is proper with respect to the personal services policy in the Armed Forces Procurement Regulation 22-102.¹⁶ There are no definitive rules for determining whether a particular service is "personal" or "non-personal"; however, guidance is provided in the Armed Forces Procurement Regulation. (refer to Appendix M)

Alternative II: Establish an In-Hospital Registry of Intermittent Registered Nurses at Five Manyears of Funding

The idea of having a pool of available and willing RNs ready to come to staff the medical-surgical nursing units is very appealing. The intermittent worker would have to be hired through the normal recruitment action by the Civilian Personnel Office, so that the medical-surgical nursing supervisor would be able to select the individuals in the same manner he would a full time employee. In this way, it would be assumed that a better quality individual would be selected.

The following is an estimation of the cost of this alternative. The grade of GS-9, Step 2 will be used in the analysis.

$$\begin{array}{l}
 \$8.46 \text{ hourly wage} \\
 \times 8 \text{ hour shift} \\
 \$67.68 \text{ per shift per registered nurse}
 \end{array}$$

A. Aggregate Census Increase

$$\begin{array}{l}
 \$67.68 \text{ per shift} \\
 \times 5 \text{ registered nurses per day} \\
 \$338.40
 \end{array}$$

$$\begin{array}{l}
 \$338.40 \text{ per day} \\
 \times 30 \text{ days} \\
 \$11152.00 \text{ per month}
 \end{array}$$

The cost of staffing one nursing unit using intermittent RNs for a thirty day period would be \$11,152.00. Again these nurses would not necessarily be used to staff the expansion nursing unit, but would take the place of regular staff who were pulled to the new unit.

B. Unit Level Increases in Census or Decrease in Staff

Three registered nurses on the average are assumed to be needed for each 24 hour period.

$$\begin{array}{l}
 \$67.68 \text{ per shift} \\
 \times 3 \text{ registered nurses} \\
 \$203.04 \text{ per day cost}
 \end{array}$$

$$\begin{array}{l}
 \$203.04 \text{ per day cost} \\
 \times 365 \text{ days/year} \\
 \$74109.40 \text{ annual cost}
 \end{array}$$

A -- \$11,152.00 Cost of Funding a 30 day period for expansion of one ward

B -- \$74,109.40 Annual cost of unit level supplemental staff

\$85,261.40 Total cost of Alternative II

The major disadvantages to this alternative is in its implementation.

- The Civilian Personnel Office would have to process the requests for the hire actions and the process would probably take three or four months to establish.

Once a roster of intermittent workers is established many advantages would begin to accrue to the benefit of the worker and the hospital.

The new employees could be brought on for a two or three day mini-orientation prior to actually working on a unit, which is not possible with agency nurses. The staff would get to know the nurses and their capabilities. The intermittent RNs would develop a greater sense of belonging to the nursing units to which they were called to work. There would be a decline in the amount of changes in the schedule for the regular staff. As a result, morale should pick up as job satisfaction increases.

Alternative III: Maintain the Present Methods of Staffing

It is obvious that with no expenditure of new funds that this alternative has the least cost associated with it. However, this alternative does not allow for any solution to the various aspects of the problem that have been addressed in this study. This option allows the present vulnerabilities to remain.

There are some definite costs associated with the present staffing situation. These costs can be stated in terms of the "burn out" that is experienced by new staff members as well as by the experienced nurses; the relatively high rate of military sick leave that is used; the lack of job satisfaction that occurs when planned schedules are changed at the last moment to accommodate unpredicted illness; the feelings of insecurity that are present when asked to "cover" an unfamiliar nursing unit.

In the "aggregate increase in census" scenario, a short diversion of special staff into patient care roles is probably wise. Even expanding duty hours to 48 hours/week or even 60 hours/week is acceptable

in a legitimate emergency or crisis situation. Nurse Corps officers have had a long tradition of dedicated service and have always responded to a challenge by putting out extra effort. However, when the situation presents as a chronic problem of under-staffing, the excitement and exhilaration of the challenge dies quickly, and the feelings of anger and frustration take hold. The costs are difficult to quantify in dollars but they are present.

Footnotes

¹ U. S. Department of the Army, Staffing Guide for Medical Department Activities, DA Pamphlet 570-577 (Washington, D.C.: Government Printing Office, 1974), p. 1-1.

² U. S. Department of the Army, Determining Manpower Requirements for Army Nursing Personnel, Study Guide 327 (Academy of Health Sciences, Ft. Sam Houston, Texas, October 1972),

³ Ibid., p. 118.

⁴ Ibid., p. 119.

⁵ U. S. Department of the Army, Health Services Command, William Beaumont Army Medical Center, Organization and Functions, Regulation 10-1 (El Paso, Texas: William Beaumont Army Medical Center, March 1980), p. 3-97.

⁶ Robert Cottle, Chief, Force Development Division, William Beaumont Army Medical Center, El Paso, Texas, personal interview, November 2, 1979.

⁷ Camille Woodruff, Classification Specialist in Position and Pay Management Branch of the Civilian Personnel Office, Ft. Bliss, Texas, personal interview, October 10, 1979.

⁸ U.S. Department of the Army, Air Defense Command Civilian Personnel Regulation 990-2 (C-1) 610.SI, Ft. Bliss, Texas, January 1978.

⁹ LTC William T. Gray, Comptroller, William Beaumont Army Medical Center, El Paso, Texas, personal interview, April 20, 1980.

¹⁰ LTC Robert Morrison, Chief, Infectious Disease Services, William Beaumont Army Medical Center, El Pasc, Texas, personal interview, February 1980.

¹¹ William Tiffany, Critique of Dona Ana Shigella Outbreak After Action Report of Emergency Preparedness Plan Committee, William Beaumont Army Medical Center, El Paso, Texas, December 1976.

¹² Dr. Francis Heck, Chief, Department of Surgery, William Beaumont Army Medical Center, El Paso, Texas, personal interview, 14 January 1980.

¹³ LTC Charles Mathews, Supervisor of Medical-Surgical Nursing Section, William Beaumont Army Medical Center, El Paso, Texas, personal interview, 25 April 1980.

¹⁴ COL Eleanor Sullivan, Chief, Department of Nursing, William Beaumont Army Medical Center, El Paso, Texas, personal interview, 20 May 1980.

¹⁵ Anne King, King's Alpha Nurses Inc., El Paso, Texas,
personal interview, 20 October 1979.

¹⁶ U. S. Department of the Army, Armed Services Procurement Regulation,
Army REGulation 22-000, Washington, D. C. Government Printing Office,
1 July 1976.

CHAPTER III

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Based upon the findings of this study it is concluded that:

1. The existing staffing plan of the Medical and Surgical Nursing Units at William Beaumont Army Medical Center provides minimally safe staffing levels.
2. There are no extra resources outside of the regular staff who can be activated to augment the nursing units during periods of increased census or periods of non-productive time for the regular staff.
3. The regular staff experiences frequent disruptions of their normal work schedule in order to provide minimal coverage on all nursing units.
4. The regular staff are subjected to high levels of stress and suffer from low morale.
5. There are mechanisms available within the Civil Service Regulations to provide supplemental staffing on an as needed basis.

In addition, Army Procurement Regulations permit contracting for medical services to civilian firms.

Recommendations

In view of the above conclusions it is recommended that:

1. Alternative II be implemented to establish an In-House Registry of intermittent Registered Nurses. It is less expensive than Alternative I and provides a more stable and higher quality work force.
2. The implementation plan be utilized as proposed in Appendix N to provide an orderly sequence of activities culminating in a successful program.
3. If the program proves to be successful the concept should be communicated to other Medical Treatment Facilities throughout the Health Services Command.

APPENDIX A

DEFINITIONS

DEFINITIONS

1. Supplemental Staffing Methods:

approaches used by hospitals to augment their regular existing staff.

2. Requirements:

those strengths that have been recognized in an official approved manpower survey of a hospital, and subsequent adjustments by manpower management personnel resulting from changes in mission, workload, or manpower utilization which occur between official manpower surveys.

3. Allocation:

refers to the limitations that Department of the Army (DA) places on commands and agencies concerning the number of military and civilian personnel they may have to perform assigned missions.

4. Authorizations:

refers to maximum manpower strength as reflected in tables of distribution and allowances (TDA) under the Army Authorization System (TAADS).

5. Assigned:

refers to number of personnel actually assigned to hospital, unit or activity. The term assigned strengths is the term most familiar to nursing service personnel. It may be of some help in understanding the lack of assigned personnel to know that the first priority for Army manpower resources goes to combat forces and other overseas and CONUS priority activities.

6. Intermittent:

category of civil service employees who only work when actually needed.

7. Temporary peak workload:

a period of time not to exceed 30 days when the aggregate or unit census increase beyond the capabilities of the regular staff.

8. Man year:

one person working full time for one year. The activity is funded in manyears, i.e. the average salary of all civilian workers (currently \$17,000).

APPENDIX B

WILLIAM BEAUMONT ARMY MEDICAL CENTER

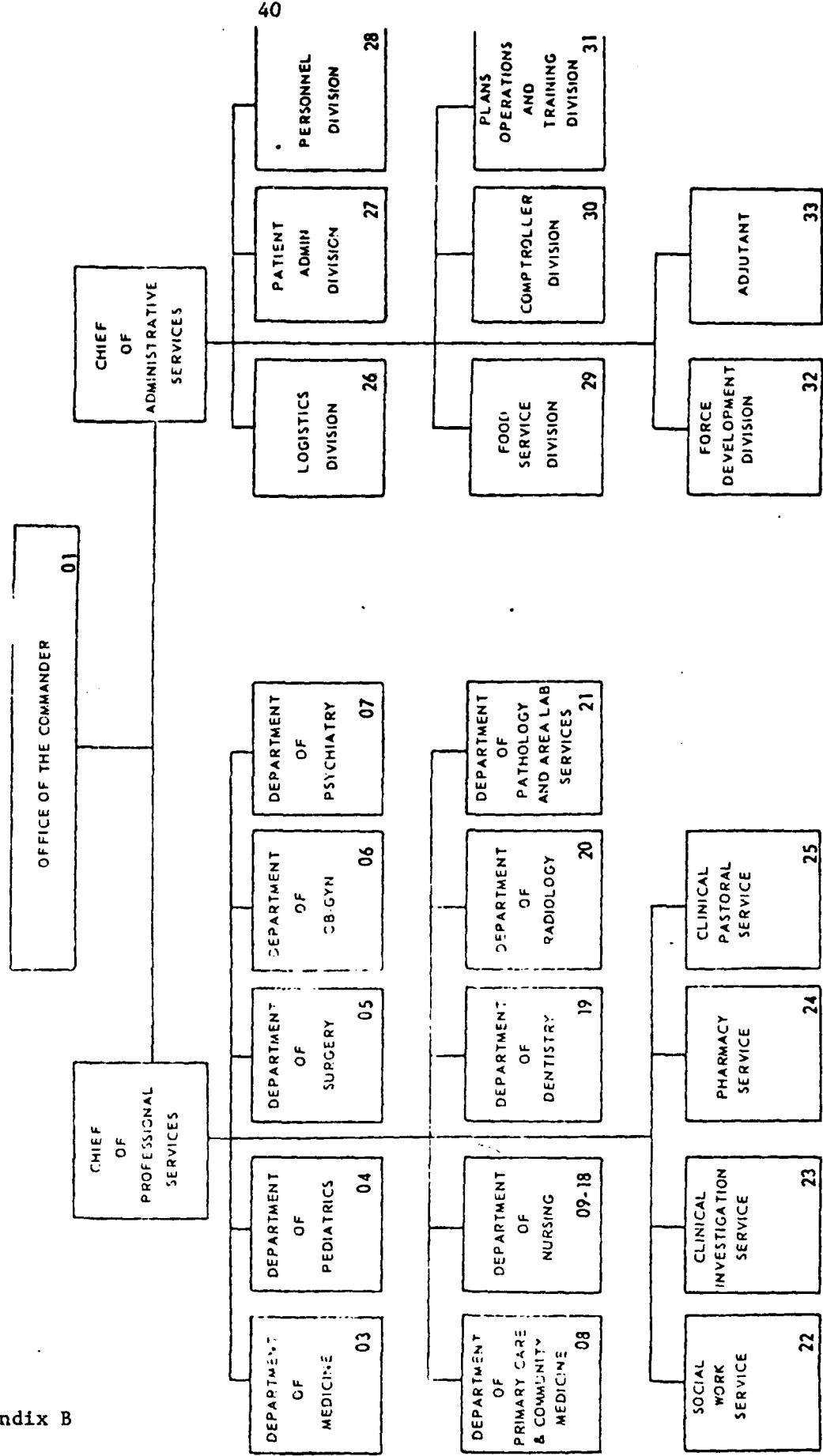
ORGANIZATIONAL CHART

HOSPITAL ORGANIZATIONAL CHART
WILLIAM BEAUMONT ARMY MEDICAL CENTER
EL PASO, TEXAS 79920

1 JANUARY 1980

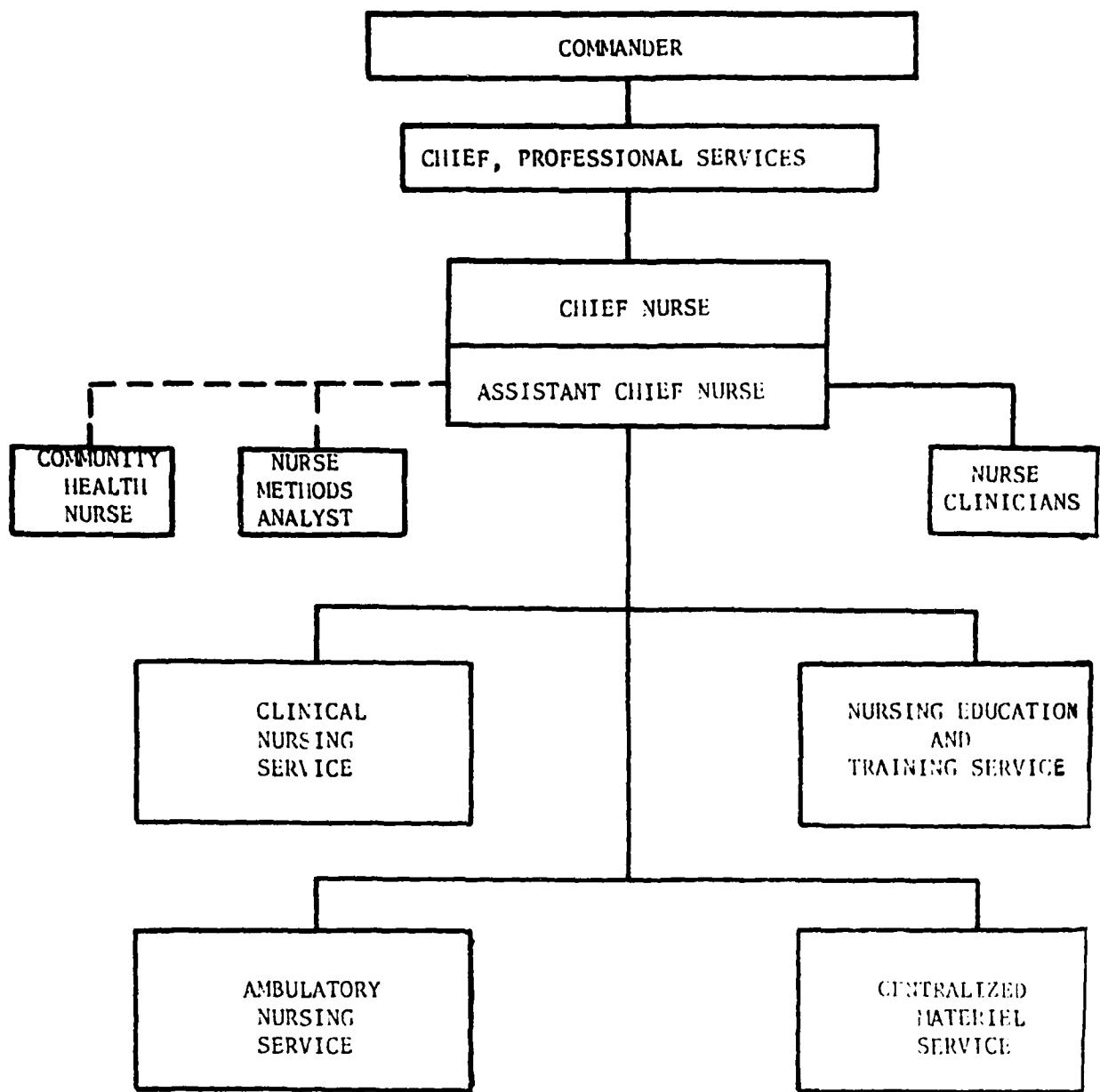
Appendix B

APPROVED
Kenneth A. Cass, M.D.
KENNETH A. CASS, MD
Brigadier General, MC
Commanding



APPENDIX C

WILLIAM BEAUMONT ARMY MEDICAL CENTER
DEPARTMENT OF NURSING ORGANIZATIONAL CHART

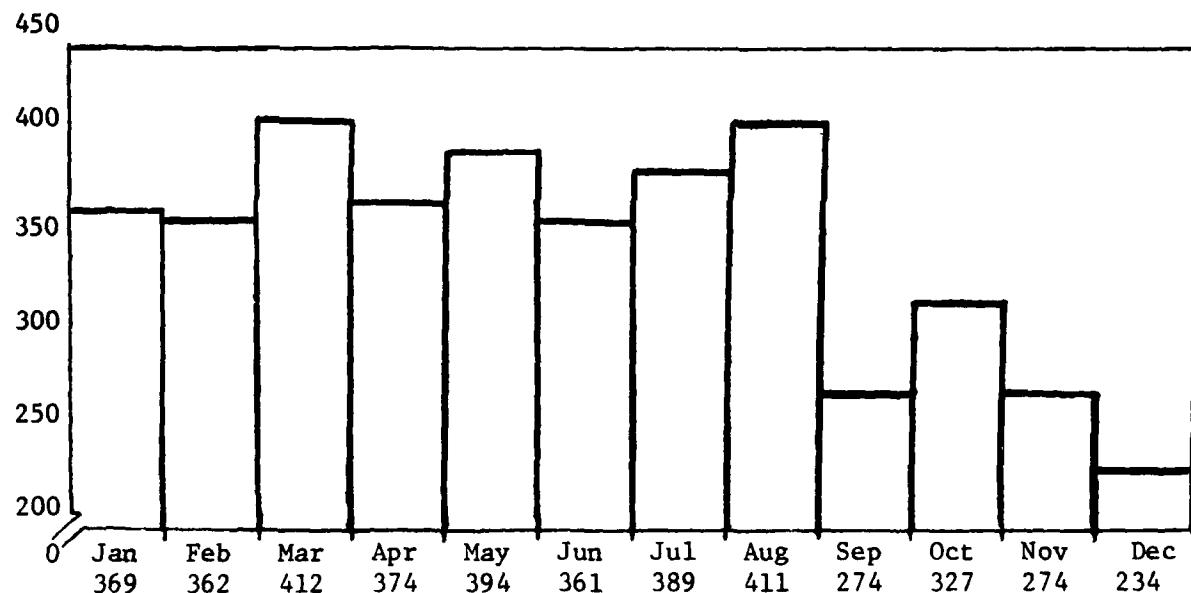


APPENDIX D

WORKLOAD STATISTICS OF DEPARTMENT OF SURGERY

BAR GRAPH

WORKLOAD STATISTICS OF DEPARTMENT OF SURGERY
Operating Room Major Cases, 1979



Source: Department of Surgery, William Beaumont Army Medical Center

APPENDIX E

IMPACT OF INCREASED OPERATING ROOM SCHEDULE

REFERENCE OR OFFICE SYMBOL ATZC-MODN	SUBJECT Impact of Increased Operating Room Schedule	46
TO DCO	FROM C, Dep of Nursing	DATE 23 Oct 79
		MAJ Stewart/mt/9-2591
<p>1. Per your request, the Department of Nursing has determined the impact of increasing the Operating Room schedule to eight (8) rooms per day (15% increase).</p> <p>2. Facts bearing on the problem:</p> <ol style="list-style-type: none">OR workload would increase by 15% to approximately 550-575 cases per month.There would be a corresponding increase in Recovery Room workload.Since 10% (49-50 patients per month) of the current Recovery Room workload is transferred directly to SICU, the SICU workload would increase by 1 to 2 daily occupied beds.An increase in surgical inpatient workload of approximately 55-60 daily occupied beds would be realized. NOTE: The length of stay for the past three months has averaged 13.3 days for Orthopedic Service and 9.8 days for other surgical services; 4.5 additional surgical admissions per day could be anticipated during the week.An increase in clinic visits of approximately 100-150 patients/month will be seen. <p>3. It has been determined that the following additional resources will be required as a result of the increased workload.</p> <ol style="list-style-type: none">Space<ol style="list-style-type: none">OR - Currently, the vacant rooms are being used for storage of equipment (such as ortho table) not in use. Additional storage space would be absolutely essential if all eight (8) rooms were used.Anesthesia - No additional space would be required.Recovery Room - Current assigned space would be sufficient, however, no isolation capability would exist.SICU - Current available space is adequate to accommodate the increased bed capacity required. However, storage space is currently insufficient and would be further taxed by the increased workload.Wards - With the additional inpatient workload, two additional intermediate care nursing units, or one intermediate and one convalescent unit, would be required. If the increased workload includes some of the pediatric surgicals now sent on CHAMPUS, increased bed capacity for pediatric/adolescent patients would be needed.Clinics - No additional space is required.		

Appendix E

DA FORM 178-2496

REPLACES DA FORM 25, WHICH IS OBSOLETE.

U.S. GOVERNMENT PRINTING OFFICE: 1978 0-675 041/144

ZC-MDDN (23 Oct 79)

SUBJECT: Impact of Increased Operating Room Schedule

b. Manpower

(1) OR - Five (5) additional recognized requirements with accompanying allocations and assigned strength would be essential. (2 RN's; three 91D techs).

(2) Anesthesia - Manpower requirements and allocations would increase from the current 13 to 15 nurse anesthetists.

(3) CMS - Current requirements are sufficient, however, allocations and assigned strength would need to be increased by two enlisted personnel.

(4) Recovery Room - One additional RN (ANC) and one 91C would be required to provide adequate recovery capability.

(5) Clinics - No additional requirements would be needed unless there is a significant rise in the chaperon coverage required.

(6) Nursing Wards - Assuming similar manpower requirements for each new ward as now available on 6E/W, an additional 22 requirements per intermediate ward would be needed (7 RN; 15 paraprofessional). A convalescent ward requires a minimum of five (5) 91C enlisted personnel. If additional GYN surgery is anticipated, an additional RN and one paraprofessional would be required for 4G. Depending on the amount that pediatric surgery increases, from 1 to 3 RN's and 3 to 4 paraprofessionals would be needed.

(7) SICU - Requirements as published in the new TDA are sufficient (42). Allocations and assigned strength will need to be increased by three (3) RN's and four (4) paraprofessionals.

c. Equipment

(1) SICU - Additional monitoring equipment would be required to support the increased bed capacity.

(2) Recovery Room - Current equipment is sufficient.

(3) Operating Room - Major equipment such as tables, etc. are adequate. However, additional instruments would be required to allow sufficient turn around time for sterilization and to eliminate the current practice of "borrowing".

(4) Anesthesia - Sufficient equipment is on hand to provide support.

(5) CMS - The washer/sterilizer currently on the 1980 MEDCASE list will be urgently needed to provide adequate support to the OR.

ATZC-MDDN (23 Oct 79)

SUBJECT: Impact of Increased Operating Room Schedule

d. Supplies

Since all nursing areas except CMS are funded through the major professional departments, no increased supply funds will be required for Department of Nursing.

4. It is recognized that the additional manpower requirements can be obtained only after an increase in workload has been documented to HSC. However, the minimal staffing already existing in some areas (i.e. ICU) would preclude further increasing the workload unless some increase in staffing is obtained.

Margaret H. Baskfield
MARGARET H. BASKFIELD
Colonel, ANC
Chief, Department of Nursing

APPENDIX F

JCAH STANDARD FOR NURSING SERVICES

JCAH STANDARD FOR NURSING SERVICES

NURSING SERVICES

Standard II The nursing department/service shall be organized to meet the nursing care needs of patients and to maintain established standards of nursing practice.

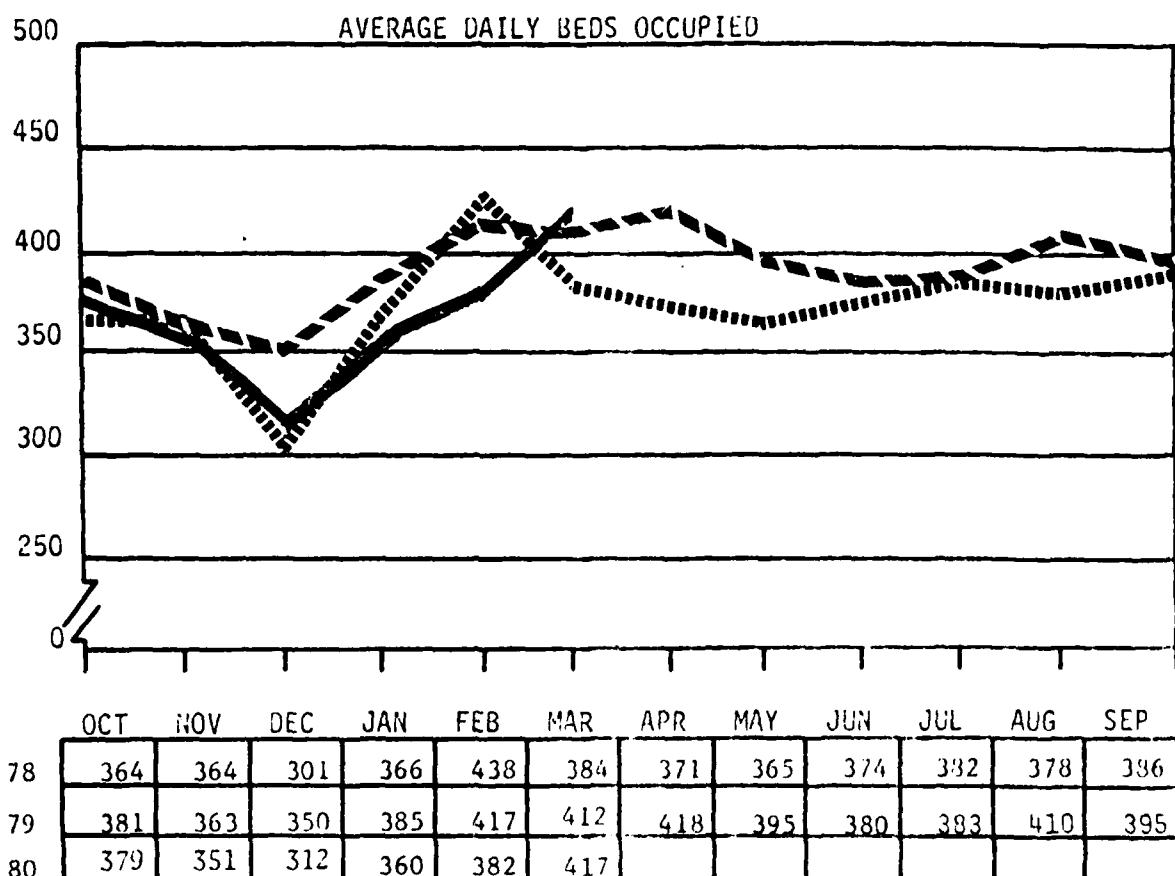
Interpretation

Outside sources when outside agencies, registries, or other sources of temporary nursing personnel are used by the nursing department/service to meet nurse staffing needs, the registered nurses and ancillary nursing personnel from such outside sources ordinarily shall be evaluated by the hospital nursing department/service through its designated mechanism. If evaluation is performed by the outside source, the mechanism for evaluation and verification of its use must be available and acceptable to the hospital. When an appropriate evaluation has not been accomplished prior to the individual's working in the hospital, the assignment of such nurses shall be limited to units that are supervised by an experienced registered nurse from the hospital nursing staff on duty at the time.

Excerpt from: Accreditation Manual for Hospitals, 1980 Edition.
Chicago, Illinois: Joint Commission on Accreditation of Hospitals, 1979, p. 117.

APPENDIX G

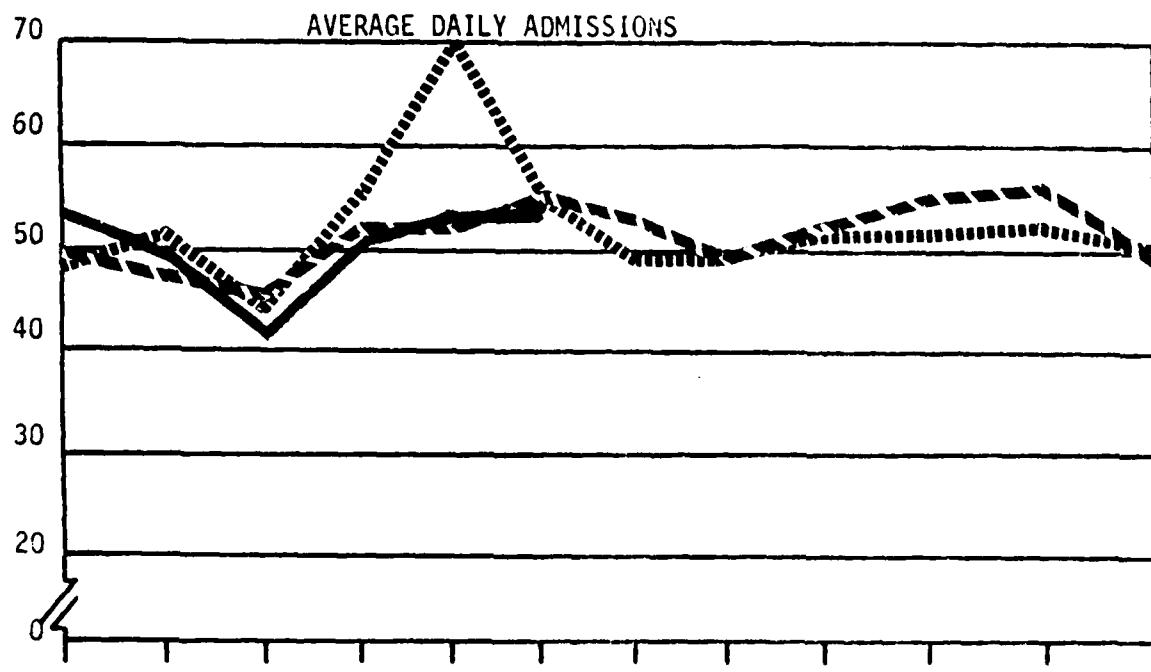
AVERAGE DAILY BEDS OCCUPIED



Source: 2nd Quarter Command Performance Summary FY 80
 William Beaumont Army Medical Center, El Paso, Texas

APPENDIX H

AVERAGE DAILY ADMISSIONS



Source: 2nd Quarter Command Performance Summary FY 80
 William Beaumont Army Medical Center, El Paso, Texas

APPENDIX I

ACTUAL NURSE STAFFING PATTERNS
FOR MEDICAL-SURGICAL UNITS

ACTUAL NURSE STAFFING PATTERNS

FOR MEDICAL-SURGICAL UNITS

Ward	Shift	Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
6E	*D	1	2.25	2.25	2.25	2.0	1.75	1
	E	1	1	1.5	1.75	1.5	1.5	1
	N	1	1	1	1	1	1	1
6W	D	1	1.25	1.5	1.75	1.5	1.5	1
	E	1.5	1	1	1	1	1	1.25
	N	1.25	1	1	1.25	1.25	1.25	1.25
7E	D	1.25	1.25	1.25	1.25	1.25	1.25	1
	E	1	1.5	1.25	1.25	1.25	1	1
	N	1	1	1	1	1	1	1
7W	D	1.25	1.5	1.5	1.25	1	1.5	1
	E	1.25	1.25	1.25	1.5	1	1	1
	N	1	1	1	1	1	1	1
8E	D	1	1.5	1.5	1.5	1.25	1.5	1
	E	1	1	1.25	1	1	1	1
	N	1	1	1	1	1	1	1
8W	D	1	1.5	2.25	1.5	1.25	1.75	1.5
	E	1	1	1.25	1.25	1.5	1	1
	N	1	1	1	1	1	1.25	1
9E	D	1.75	2.25	2.25	1.75	1.75	2	1.4
	E	1.5	1.25	1.5	1.5	1.5	1.25	1.12
	N	1	1	1	1.25	1.25	1	1
9W	D	2	2	2	2	2	2.4	2
	E	1	1.25	1.25	1.5	1.5	1.9	1.25
	N	1	1	1	1	1	1	1
10W	D	1.75	2	2.75	2.75	2.6	2.4	1.25
	E	1.75	1.75	1.75	2.5	2.12	2.12	1.75
	N	1.25	1.25	1	1	1	1	1

*D - Day Shift

E - Evening Shift

N - Night Shift

Source: Data obtained from actual work schedules of four weeks chosen randomly from a four month period and then averaged to obtain the above numbers. Department of Nursing, William Beaumont Army Medical Center, El Paso, Texas.

APPENDIX J
MINIMAL STAFFING LEVELS
FOR MEDICAL-SURGICAL UNITS

MINIMAL STAFFING LEVELS
FOR MEDICAL-SURGICAL UNITS

Ward	Shift	Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
6E	*D	1	2	2	2	2	2	1
	E	1	1	1	1	1	1	1
	N	1	1	1	1	1	1	1
6W	D	1	2	2	2	2	2	1
	E	1	1	1	1	1	1	1
	N	1	1	1	1	1	1	1
7E	D	1	2	2	2	2	2	1
	E	1	1	1	1	1	1	1
	N	1	1	1	1	1	1	1
7W	D	1	2	2	2	2	2	1
	E	1	1	1	1	1	1	1
	N	1	1	1	1	1	1	1
8E	D	1	1	1	2	2	1	1
	E	1	1	1	1	1	1	1
	N	1	1	1	1	1	1	1
8W	D	1	2	2	2	2	2	1
	E	1	1	1	1	1	1	1
	N	1	1	1	1	1	1	1
9E	D	2	2	2	2	2	2	2
	E	1	2	2	2	2	2	1
	N	1	1	1	1	1	1	1
9W	D	2	2	2	2	2	2	2
	E	1	2	2	2	2	2	1
	N	1	1	1	1	1	1	1
10W	D	2	2	2	2	2	2	2
	E	1	2	2	2	2	2	1
	N	1	1	1	1	1	1	

*D - Day Shift

E - Evening Shift

N - Night Shift

Source: Department of Nursing, William Beaumont Army Medical Center,
 El Paso, Texas, 16 April 1980.

APPENDIX K

SUMMARY OF TIME SCHEDULE CHANGES

SUMMARY OF TIME SCHEDULE CHANGES

	Week 1		Week 2		Week 3		Week 4	
	East	West	East	West	East	West	East	West
6	3/8	1/6	5/8	3/7	3/8	2/7	2/8	1/6
7	3/7	2/6	3/7	0/6	3/7	1/6	1/7	0/6
8	1/7	2/6	2/6	4/6	1/6	2/6	1/6	2/7
9	0/7	1/7	4/7	3/7	0/7	1/7	2/7	3/8
10	<u>2/6</u>	<u>2/8</u>	<u>2/7</u>	<u>2/9</u>	<u>3/7</u>	<u>1/8</u>	<u>3/6</u>	<u>2/8</u>
Subtotals	17/68=25%		28/70=40%		17/69=24%		17/69=24%	

Total $79/276 = 28.6\%$ of the staff had their schedule altered some time between the time the schedule was posted and the day actually worked

Source: Data obtained from actual work schedules of four weeks chosen randomly from a four month period. Department of Nursing, William Beaumont Army Medical Center, El Paso, Texas.

APPENDIX L

ACUTE RESPIRATORY DISEASE EXPANSION PLAN

ACUTE RESPIRATORY DISEASE EXPANSION PLAN

Staffing:

1. The Department of Nursing Acute Respiratory Disease Project Officer for the 1979-1980 season is the Infection Control Nurse. The Project NCO is the Infection Control NCOIC.
2. The Project Officer will be responsible directly to the Chief or Acting Chief and will function in the capacity of liaison officer for the department regarding any matters dealing with equipment, supplies, inter-departmental coordinations, etc.

3. Recommended minimum staffing for each 70 bed ARD unit is as follows:

DAY - 1 RN	EVE - 1 91C	NIGHT - 91C
- 1 91C	- 1 91B	- 91B
- 1 91B	- 1 Ward Clerk	
- 1 Ward Clerk	(or 2 91B)	

4. Ward clerk support will be provided by "C" Company.
5. This type of skeleton staffing is designed to provide minimal care to a large group of marginally ill patients. Patients who develop more severe symptomatology are to be transferred to the main hospital.

Source: Excerpt from Acute Respiratory Disease Expansion Plan.
Department of Nursing, William Beaumont Army Medical Center, El Paso, Texas.

APPENDIX M

EXAMPLES OF PERSONAL VERSUS NONPERSONAL SERVICES

EXAMPLES OF PERSONAL VERSUS NONPERSONAL SERVICES

22-102.3 It is to be emphasized that the examples below are for illustrative purposes only and are not to be used as the basis for a determination in any specific case.

(a) Personal. The following are examples of personal services contracts:

(1) contract for the furnishing of ordinary, day-to-day stenographic and secretarial services in a government office under government supervision exercised either directly or through a contractor supervisor, even if only for a peak work period of two weeks;

(2) contract for preparation of a staff type report on the operation of a particular government office or installation, where no specialized skills are required and the report would ordinarily be prepared by the regular officers or employees of the office or installation even if there is to be no government supervision and even if payment is to be for an "end product" report;

(3) contract for the furnishing of persons to perform the various day-to-day functions of contract administration for a government agency, even if there is no government supervision, and

(4) contract with an accounting firm to come in and perform day-to-day accounting functions for the government.

(b) Nonpersonal. The following are examples of nonpersonal service contracts:

(1) contract for field engineering work requiring specialized equipment and trained personnel unavailable to the government but not involving the exercise of discretion on behalf of the government, where the contractor performs work adequately described in the contract free of government supervision;

(2) contract with an individual for delivery of lectures without government supervision, at specific places, on specific dates, and on a specialized subject, even if payment is by the hour;

(3) contract for janitorial services, where the contract provides for specific tasks to be performed in specific places, free of government direction, supervision, and control over the contractor's employees, at a fixed price for the work to be performed; and

(4) research and development contract, providing a fixed price for a level of effort, as long as the work is performed by the contractor independently of government direction, supervision, and control.

Source: U. S. Department of the Army Armed Services Procurement Regulation 22-102.3, Washington, D.C., Government Printing Office, 1 July 1976.

APPENDIX N
IMPLEMENTATION PLAN

IMPLEMENTATION PLAN

In order to begin using intermittent registered nurses in the Department of Nursing, Medical-Surgical Section, a certain amount of startup time must be projected. The sequence of events would occur in the following manner:

1. Decision made to use intermittent nurse to form an inhouse registry.
2. The Medical-Surgical supervisor submits 20 hire actions to civilian personnel office.
3. The civilian personnel office takes about 60 days to process the average hire action.
4. During the time that hire actions are being processed:
 - a. Nursing Education and Training is tasked to develop a 2-3 day orientation for the intermittent RN.
 - b. Classes are conducted for head nurses and supervisors on the proper utilization of these new employees. This would be to insure that the letter and spirit of regulations covering this category of worker are not violated.
 - c. Attitude survey is done regarding present job satisfaction of RN staff.
5. Referral lists are sent to the Medical-Surgical supervisor and interviews are set up for the applicants. During the interview the supervisor should attempt to critically analyze the applicants' attitude toward this on call position and their willingness to respond when called.

6. Intermittent nurses are brought in to the hospital for the orientation period preferably in groups of five, or as they are hired.

7. Close liaison is maintained between the Medical-Surgical supervisor, the Comptroller, and the Force Development office as nurses from the registry are called in to work on an as needed basis. Records are maintained to insure that funding limits for the program are not exceeded.

8. Three months after the program is activated a post implementation survey is done to determine the effectiveness of the program and impact on staff morale and job satisfaction.

9. Consider expanding the registry to cover other sections of the Department of Nursing.

BIBLIOGRAPHY

BIBLIOGRAPHY

Government Publications

1. U.S. Department of the Army. Armed Services Procurement Regulation. Army Regulation 22-000. Washington, D.C.: Government Printing Office, 1 July 1976.
2. U.S. Department of the Army. Financial Administration: Economic Analysis and Program Evaluation of Resource Management. Army Regulation 37-13. Rev. ed. Washington, D.C.: Government Printing Office, 6 April 1973.
3. U.S. Department of the Army. Health Services Command. Academy of Health Sciences. Determining Manpower Requirements for Army Nursing Personnel. Study Guide 327. Fort Sam Houston, Texas: Academy of Health Sciences, June 1974.
4. U.S. Department of the Army. Health Services Command. Table of Distributions and Allowances Documentation for William Beaumont Army Medical Center. Fort Sam Houston, Texas: Health Services Command, April 1980.
5. U.S. Department of the Army. Health Services Command. William Beaumont Army Medical Center. Organization and Functions. Regulation No. 10-1. El Paso, Texas: William Beaumont Army Medical Center, 1 March 1980.
6. U.S. Department of the Army. Staffing Guide for U.S. Army Medical Department Activities. DA Pam 570-557. Washington, D.C.: Government Printing Office, June 1974.
7. U.S. Department of Health, Education and Welfare. Public Health Service. Methods for Studying Nurse Staffing In a Patient Unit. DHEW Publication No. HRA 78-3. Washington, D.C.: U.S. Government Printing Office, May 1978.

Books

1. Anthony, Robert N. Management Accounting. Homewood, Illinois: Richard D. Irwin, 1970.

2. Bean, Joseph J., Jr. and Rene Laliberty. Understanding Hospital Labor Relations. Reading, Massachusetts: Addison-Wesley Publishing Co., 1977.
3. Dewhurst, R.F.J. Business Cost-Benefit Analysis. New York: McGraw-Hill Book Co., 1972.
4. DiVincenti, Marie. Administering Nursing Service. Boston: Little, Brown and Co., 1977.
5. Famularo, Joseph J., Editor-in-chief. Handbook of Modern Personnel Administration. New York: McGraw-Hill Book Co., 1972.
6. Goldstein, Harold M. and Morris A. Horowitz. Utilization of Health Personnel. Germantown, Maryland: Aspen Systems Corp., 1978.
7. Heaton, Herbert. Productivity In Service Organizations. New York: McGraw-Hill Book Co., 1977.
8. Joint Commission on Accreditation of Hospitals. Accreditation Manual for Hospitals, 1980 Edition. Chicago, Illinois: Joint Commission on Accreditation of Hospitals, 1979.
9. Millman, Michael L., editor. Nursing Personnel and the Changing Health Care System. Cambridge, Massachusetts: Ballinger Publishing Co., 1978.
10. Mott, Paul E., Floyd C. Mann, Quin McLoughlin and Donald P. Warwick. Shift Work. Ann Arbor: The University of Michigan Press, 1965.
11. Paetznick, Marguerite. A Guide for Staffing a Hospital Nursing Service. Geneva: World Health Organization, 1966.
12. Stevens, Barbara J. The Nurse as Executive. Wakefield, Massachusetts: Contemporary Publishing Inc., 1975.

Periodicals

1. Anzalone, Charlotte. "Supplemental Staffing Services' Goal: Trying to Help Fill Void in Nurse Shortage." Review, Vol. 13, No. 2 (April-May 1980), p. 32-34.
2. Araujo, Marianne. "Creative Nursing Administration Sets Climate for Retention." Hospitals, Vol. 54, No. 9, (May 1, 1980), p. 72-76.
3. Ballantyne, Donna T. "A Computerized Scheduling System with Centralized Staffing." Journal of Nursing Administration, Vol. IX, No. 3, (March 1979), p. 38-45.

4. Boyer, Cheryl M. "The Use of Supplemental Nurses: Why, Where, How?" Journal of Nursing Administration, Vol. IX, No. 3, (March 1979), p. 56-60.
5. Crabtree, Mary. "Application of Cost-Benefit Analysis to Clinical Nursing Practice: A Comparison of Individual and Group Preoperative Teaching." Journal of Nursing Administration, Vol. VIII, No. 12 (December 1978), p. 11-16.
6. Langford, Teddy and Patricia A. Prescott. "Hospitals and Supplemental Nursing Agencies: An Uneasy Balance." Journal of Nursing Administration, Vol. IX, No. 11 (November 1979), p. 16-20.
7. Latham, Joseph and Jean Fagan. "Control of Christmas Holiday Census and Staffing." Journal of Nursing Administration, Vol. IX, No. 10 (October 1979), p. 19-23.
8. Mills, Richard. "A Simple Method for Predicting Days of Increased Patient Census." Journal of Nursing Administration, Vol. VII, No. 2 (February 1977), p. 15-20.
9. _____ . "Non-Profit Illinois Registry Provides "Weekend" Nurses." Review, Vol. 13, No. 2 (April/May 1980), p. 24.
10. _____ . "Who Controls Quality of "Temporary" Registry Nurses?" Hospital Peer Review, Vol. 4, No. 2 (February 1979), p. 17-20.
11. Williams, Margaret A. and Laurel N. Murphy. "Subjective and Objective Measures of Staffing Adequacy." Journal of Nursing Administration, Vol. IX, No. 11 (November 1979), p. 21-29.
12. Zegeer, Louise Timm. "Calculating a Nurse Staffing Budget for a 20 Bed Unit at 100% Occupancy." Journal of Nursing Administration, Vol. VII, No. 2 (February 1977), p. 11-14.

Unpublished Sources

1. Baskfield, Margaret H. "Impact of Increased Operating Room Schedule" Reply to Chief of Professional Services, William Beaumont Army Medical Center, El Paso, Texas, 23 October 1979.
2. Department of Nursing, William Beaumont Army Medical Center. Minimal Acceptable Staffing Levels. El Paso, Texas: William Beaumont Army Medical Center, 16 April 1980.
3. Tiffany, William R., M.D. Critique of Dona Ana Shigella Outbreak, After Action Report of Emergency Preparedness Plan, William Beaumont Army Medical Center, El Paso, Texas, December 1976.

4. Personal interview with Camille Woodruff, Classification Specialist in Position and Pay Management Branch of the Civilian Personnel Office, Ft. Bliss, Texas, October 10, 1979.
5. Personal interview with Robert Cottle, Chief, Force Development Division, William Beaumont Army Medical Center, El Paso, Texas, November 2, 1979.
6. Personal interview with Dr. Francis Heck, Chief, Department of Surgery, William Beaumont Army Medical Center, El Paso, Texas, January 1980.
7. Personal interview with LTC Robert Morrison, Chief, Infectious Disease Services, William Beaumont Army Medical Center, El Paso, Texas, February 1980.
8. Personal interview with LTC William T. Gray, Comptroller, William Beaumont Army Medical Center, El Paso, Texas, 20 April 1980.
9. Personal interview with LTC Charles Mathews, Supervisor of Medical-Surgical Nursing Section, William Beaumont Army Medical Center, El Paso, Texas, 25 April 1980.
10. Personal interview with COL Elenore Sullivan, Chief, Department of Nursing, William Beaumont Army Medical Center, El Paso, Texas, 20 May 1980.

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